What is claimed is:

~~CLAIMS~~

1. A peptide comprising at least 9 contiguous amino acids of SEQ.ID.NO.1.
2. A peptide comprising the amino acid sequence of SEQ.ID.NO.3 or a functional fragment thereof.
3. A peptide according to claim 1 or 2 exhibiting trypanolytic activity preferably in combination with cytolytic and/or glucan binding and/or LPS binding and/or opsonizing activity.
4. An antibody specifically recognizing the peptide of any of the preceeding claims or a fragment or epitope thereof.
5. A DNA sequence encoding an Eisenia foetida protein or polypeptide or encoding an immunologically active and/or functional fragment thereof selected from the group consisting of
   (a) DNA sequences comprising a nucleotide sequence encoding a protein or peptide comprising the amino acid sequence as given in SEQ ID NO. 1 or 3;
   (b) DNA sequences comprising a nucleotide sequence as given in SEQ ID NO: 2;
   (c) DNA sequences hybridizing with the complementary strand of a DNA sequence as defined in (a) or (b) and encoding an amino acid sequence which is at least 80% identical to the amino acid sequence encoded by the DNA sequence of (a) or (b);
   (d) DNA sequences the nucleotide sequence of which is degenerated as a result of the genetic code to a nucleotide sequence of a DNA sequence as defined in any one of (a) to (c); and
   (e) DNA sequences encoding a fragment of a protein encoded by a DNA sequence of any one of (a) to (d).
6. A recombinant expression vector comprising a DNA sequence according to claim 5.
7. A host cell transformed or transfected with an expression vector according to claim 6.

Sub A4> 8. The host cell of claim 7 wherein the host cell is selected from the group consisting of *E. Coli, Bacillus sp., Streptomyces sp.*, yeast, fungi, insect cells, plant cells or mammalian cells.

Sub C1> 9. The host cell of claim 8, wherein the host cell is *E. Coli.*

Sub A5> 10. A method for the production of an Eisenia foetida polypeptide or an immunologically active or functional fragment thereof comprising culturing a host cell of claim 7, 8 or 9 under conditions allowing the expression of said polypeptide and recovering the produced polypeptide from the culture.

11. A pharmaceutical composition comprising at least a peptide according to claim 1, 2 or 3.

Sub A6> 12. Use of a peptide according to claim 1, 2 or 3 for the preparation of a medicament to treat trypanosomal infection, bacterial infection or cancer.

Add A8>

Add C1>

Table 1 : aminoacid sequence of CCF-1 and TNF/TIP peptides

Peptide	Amino acid sequence
CCF-1.1	N-terminus : NH2-FTDWDQYHIVWQDEFDYFDGAKWQHEVTAT-COOH
CCF-1.2	(R,K) ↓ NH2-VYK-COOH
CCF-1.4	(R,K) ↓ NH2-NTGGEFLGIQK-COOH
CCF-1.5	(R,K) ↓ NH2-MGSTMHWGPGWDDNER-COOH
CCF-1.8	(R,K) ↓ NH2-YWLTSLPK-COOH
CCF-1.10 (CCF-1/TIP)	(R,K) ↓ NH2-SGEIDIIETIGNR-COOH
TNF/TIP	TPEGAEA

Table 2 : trypanolytic activity of CF and CCF-1.

CF tested[a]	Neutralizing antibody[d] (12C9)	% Trypanolysis	% Inhibition
1. Total CF[b]	-	97	
	+	10	90
2. CF flow through[b]	-	94	
(irrelevant IgG column)	+	7	93
3. CF flow through[b]	-	30	
(12C9 column)	+	2	94
4. Eluate (CCF-1)[c]	-	42	
(12C9 column)	+	0	100

a : CF and CF subfractions were purified by immunoaffinity on irrelevant IgG or 12C9 column and tested for trypanolytic activity in the trypanolysis assay (% trypanolysis was recorded after 2 hrs).

b : Concentration used = 1 mg/ml.

c : Concentration used = 4 µg/ml.

d : 12C9 antibody was added at a concentration of 10 µg/ml.

Table 3 : inhibition of the trypanolytic activity (*T. brucei*) of CCF-1 and TNF-α by antibodies and carbohydrates

Inhibitor[a]	CCF-1 mediated trypanolysis[b]		TNF-α mediated trypanolysis[c]	
	% Lysis	% Inhibition	% Lysis	% Inhibition
None	42	-	41	-
N,N-diacetylchitobiose	3	73	0	100
Cellobiose	49	0	41	0
Polyclonal anti-TNF/TIP	0	100	0	100
Polyclonal IgG control	46	0	43	0
Monoclonal anti-TNF/TIP	0	100	0	100
Monoclonal IgG control	49	0	41	0
Monoclonal anti-CCF-1(12C9)	0	100	1	98
Monoclonal anti-TNF(1F31F3)	44	0	41	0

a : Inhibitors were added at a final concentration of 10 µg/ml.

b : CCF-1 was added in the trypanolysis assay at a final concentration of 4 µg/ml.

c : TNF-α was added in the trypanolysis assay at a final concentration of 1.000 U/ml.

Table 4 : inhibition of the trypanolytic activity (*T. cruzi*) of CF by antibodies and carbohydrates

Inhibitor[a]	CF-1 mediated trypanolysis[b]	
	% Lysis	% Inhibition
None	62	-
N,N'-diacetylchitobiose	19	70
Cellobiose	67	0
Monoclonal anti-CCF-1(12C9)	30	52
Monoclonal IgG control	67	0

a : Inhibitors were added at a final concentration of 10 µg/ml.

b : CF was added in the trypanolysis assay at a final dilution of 1 : 4.000.

Table 5 : inhibition of the cytolytic activity of CCF-1 (L929) by antibodies and carbohydrates

Inhibitor[a]	CCF-1 mediated cytolysis[b]	
	% Lysis	% Inhibition
Experiment 1		
None	72	-
N,N'-diacetylchitobiose	0	100
Monoclonal anti-CCF-1(12C9)	0	100
Monoclonal anti-TNF/TIP	0	100
Experiment 2		
None	66	-
Monoclonal anti-CCF-1(12C9)	14	79
Monoclonal anti-CCF-1(7F1)	0	100
Monoclonal anti-CCF-1(6H1)	0	100

a : Inhibitors were added at a final concentration of 10 µg/ml

b : CCF-1 was added in the L929 cytolysis assay at a final concentration of 4 µg/ml

Table 6 : parasitaemia in mice treated with anti-CCF-1 mAbs (group of 10 mice)

	Parasites x 10^6/ml	
Day pi	Control mAb-treated	anti-CCF-1 treated
3	104	135
4	129	194
5	64	84
6	2	2

Table 7 : parasitaemia in untreated or CCF-1-treated mice (group of 4 mice)

	Parasites x 10^6/ml	
Day pi	untreated	rCCF-1 treated
3	207	142
4	211	143
5	102	104
6	6	1.2

Table 8: Production of TNF-a by 2C11-12 activated with CCF-1

µg/ml CCF-1	pg/ml TNF–α
40	5843
20	2483
10	1112
5	370
2.5	60
1.25	17
0.625	Nd

nd: not detectable

Table 9: Production of TNF-a by C3H/J PECs activated with CCF-1

µg/ml CCF-1	pg/ml TNF–α	
	- IFN–γ	+ IFN–γ
40	nd	300
20	nd	130
10	nd	30
5	nd	Nd
2.5	nd	Nd
1.25	nd	Nd
0.625	nd	Nd

nd: not detectable